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REMARKS/ARGUMENTS

Claims 2-22 are pending in this application. By this Amendment, Applicant has amended claim 2 and added new claims 13-22.

Applicant's counsel greatly appreciates the courtesies extended by the Examiner in the personal interview of October 21, 2004. In the personal interview, Applicant's counsel explained the present invention and the differences between the applied prior art and the present invention and presented possible claim amendments to more clearly distinguish the present invention over the applied prior art. In response, the Examiner indicated that he thought that the last paragraph of claim 2 was confusing, and that he had interpreted the feature recited therein in a manner contrary to the meaning of the claimed feature as explained by Applicant's counsel. No agreement was reached.

Claims 2-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (U.S. 5,802,196) in view of Nakamura et al. (U.S. 4,344,503). Applicant respectfully traverses the rejection of claims 2-12.

Claim 2 has been amended to recite:

"A loudspeaker having a desired bandwidth comprising:
a spherical or hemispherical vibrator having a natural resonant frequency;
a first baffle board to mount the vibrator;
a second baffle board arranged with a space between the second baffle board and first baffle board; and
a plurality of spacers for connecting the first baffle board and second baffle board;
wherein the natural resonant frequency of the vibrator has a value that is greater than any frequency in the desired bandwidth of the loudspeaker." (emphasis added)

The Examiner alleged that Nakamura ('196) teaches all of the features recited in claim 2, except for the vibrator having a natural resonant frequency higher than the desired bandwidth of the loudspeaker. The Examiner further alleged that Nakamura et al. ('503) "teaches in the abstract that a transducer with an elevated resonance frequency improves the frequency characteristics of the transducer." Thus, the

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Examiner concluded that it would have been obvious to modify the vibrator 12 of Nakamura ('196) using a ceramic material and having a natural resonant frequency higher than the bandwidth of the loudspeaker, as allegedly taught by Nakamura et al. ('503), "for the purpose of improving the frequency characteristics of the loudspeaker." Applicant respectfully disagrees.

Claim 2 has been amended to recite the feature of "the natural resonant frequency of the vibrator has a value that is greater than any frequency in the desired bandwidth of the loudspeaker."

In contrast to the Examiner's allegations and Applicant's claim 2, Nakamura et al. ('503) merely teaches that a diaphragm may utilize a layer of ceramic material "by which the E/ρ ratio of the diaphragm can be increased, leading to an elevated resonance frequency of the diaphragm." In other words, Nakamura et al. ('503) merely teaches that the resonance frequency of the diaphragm can be increased by a ceramic material layer. Nakamura et al. ('503) fails to teach or suggest anything at all about the desired bandwidth of the loudspeaker or a relationship between the natural resonant frequency of the vibrator and the desired bandwidth of the loudspeaker, and certainly fails to teach or suggest the feature of "the natural resonant frequency of the vibrator has a value that is greater than any frequency in the desired bandwidth of the loudspeaker" as recited in Applicant's claim 2.

As the Examiner appreciates from the explanation provided during the personal interview of October 21, 2004 and the amendments to claim 2, Applicant's claimed invention requires much more than using a layer of ceramic material to increase a resonance frequency of a diaphragm. As is clear from Claim 2 as amended, Applicant's claimed invention requires a loudspeaker having a desired bandwidth and including a vibrator, wherein the natural resonant frequency of the vibrator has a value that is greater than any frequency in the desired bandwidth of the loudspeaker. The prior art relied upon by the Examiner is completely silent about such features and clearly fails to teach or suggest anything at all relating to such claimed features.

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The Examiner is reminded that prior art rejections must be based on evidence.

Graham v. John Deere Co., 383 U.S. 117 (1966). The Examiner is hereby requested to cite a reference in support of his position that it was well known at the time of Applicant's invention to provide a vibrator having a natural resonant frequency that is greater than any frequency in the desired bandwidth of the loudspeaker. If the rejection is based on facts within the personal knowledge of the Examiner, the data should be supported as specifically as possible and the rejection must be supported by an affidavit from the Examiner, which would be subject to contradiction or explanation by affidavit of Applicants or other persons. See 37 C.F.R. § 1.104(d)(2).

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Nakamura ('196) in view of Nakamura et al. ('503).

Claim 13 recites:

"A loudspeaker comprising:
a spherical or hemispherical vibrator;
a first baffle board having first and second major surfaces, said
vibrator being mounted on the first major surface of the first baffle board
so as to extend outwardly therefrom;
a second baffle board arranged so as to be spaced from the first
baffle board; and
a plurality of spacers for connecting the first baffle board and
second baffle board; wherein
**the second baffle board is arranged such that the first baffle
board is disposed between the vibrator and the second baffle board.**"
(emphasis added)

In contrast to Applicant's claim 13, Nakamura ('196) teaches a loudspeaker in which the reflecting member 38 (which the Examiner alleged corresponds to a second baffle board) is arranged such that the vibrator 12 is disposed between the flange portion 26 (which the Examiner alleged corresponds to a first baffle board) and the reflecting member 38. Thus, Nakamura ('196) certainly fails to teach or suggest the feature of "the second baffle board is arranged such that the first baffle board is

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disposed between the vibrator and the second baffle board" (emphasis added) as recited in Applicant's claim 13.

Nakamura et al. ('503) fails to teach or suggest any second baffle board, and thus, certainly fails to teach or suggest the feature of "the second baffle board is arranged such that the first baffle board is disposed between the vibrator and the second baffle board" as recited in Applicant's claim 13.

Accordingly, Applicant respectfully submits that Nakamura ('196) and Nakamura et al. ('503), applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicant's claims 2 and 13.

In view of the foregoing amendments and remarks, Applicant respectfully submits that claims 2 and 13 are allowable. Claims 3-12 and 14-22 depend upon claims 2 and 13, and are therefore allowable for at least the reasons that claims 2 and 13 are allowable.

In view of the remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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